

WHAT IS CLAIMED IS:

1. A plasticized polyvinylbutyral composition having a hydroxyl number of from about 15 to about 34, wherein the PVB composition comprises (a) a mixture of meso and racemic stereoisomers wherein the ratio of meso to racemic stereoisomers (M/R) is in the range of from about 2.5 to about 5.0 (b) a surfactant (c) plasticizer in an amount of from about 30 to about 50 parts per hundred (pph) PVB and log of tensile creep (tensile creep) less than or equal to 3.0.
- 10 2. The composition of Claim 1 wherein the surfactant is selected from: sodium dioctylsulfosuccinate, sodium methyl cocoyl taurate, sodium lauryl sulfate, or mixtures thereof.
3. The composition of Claim 2 wherein the PVB has a hydroxyl number of from about 17 to about 19 and wherein the ratio of meso to
- 15 15. racemic stereoisomers (M/R) is in the range of from about 3.1 to about 3.5.
4. The composition of Claim 3 wherein the PVB has tensile creep of less than or equal to 2.5.
5. The composition of Claim 4 wherein the PVB has a tensile creep of
- 20 20. less than or equal to 1.5.
6. A process for preparing a PVB resin composition having a mixture of meso and racemic stereoisomers, the process comprising the steps: (a) mixing components (i) through (v) to obtain an aqueous reaction mixture (RM); and, (b) stirring RM for a period of from about 15 minutes to about
- 25 25. 180 minutes at a temperature in the range of from about 5°C to about 100°C to obtain the PVB resin composition, wherein the components of RM are (i) water, (ii) an acidic aqueous polyvinyl alcohol solution having a dry weight PVA concentration of from about 8 wt% to about 20 wt%, based on the total weight of the solution, that is maintained at a temperature of at
- 30 30. least about 80 °C, (iii) an acid compound or mixture of acid compounds present in an amount sufficient to give RM a pH of from about 1.3 to about 2.5; (iv) a surfactant or a mixture of surfactants present in an amount of from about 0.1 wt % to about 0.70 wt % based on the dry weight of the PVA, and (v) butyraldehyde, wherein the ratio of (ii) to (v) is sufficient such
- 35 35. that there is unreacted hydroxyl functionality in the PVB resin composition, and wherein the PVB resin composition has a hydroxyl number of from

about 15 to about 34 and further wherein the meso to racemic ratio (M/R) of the PVB composition is in the range of from about 2.5 to about 5.0.

7. The process of Claim 6 wherein the surfactant is selected from surfactants in the group consisting of: sodium dioctylsulfosuccinate,

5 sodium methyl cocoyl taurate, sodium lauryl sulfate, or mixtures thereof, in an amount of from about 0.1 wt % to about 0.70 wt % based on the dry PVA weight used in the PVB resin recipe.

8. The process of Claim 7 further comprising the steps of: (i) raising the pH of the mixture to a pH of at least 10 (ii) draining the liquid from the
10 mixture and (iii) washing the PVB with neutral pH water.

9. The process of Claim 8 wherein sodium methyl cocoyl taurate is the surfactant.

10. The process of Claim 8 wherein sodium lauryl sulfate is the surfactant.

15 11. The process of Claim 8 wherein sodium dioctylsulfosuccinate is the surfactant is the surfactant.

12. The process of Claim 8 wherein phosphoric acid is used as the acid reactant.

13. A plasticized PVB composition made by a process comprising the
20 steps: (a) mixing components (i) through (v) to obtain an aqueous reaction mixture (RM); and, (b) stirring RM for a period of from about 15 minutes to about 180 minutes at a temperature in the range of from about 5°C to about 100°C to obtain the PVB resin composition, wherein the components of RM are (i) water, (ii) an acidic aqueous polyvinyl alcohol
25 solution having a dry weight PVA concentration of from about 8 wt% to about 20 wt%, based on the total weight of the solution, that is maintained at a temperature of at least about 80 °C, (iii) an acid compound or mixture of acid compounds present in an amount sufficient to give RM a pH of from about 1.3 to about 2.5; (iv) a surfactant or a mixture of surfactants
30 present in an amount of from about 0.1 wt % to about 0.70 wt % based on the dry weight of the PVA, and (v) butyraldehyde, wherein the ratio of (ii) to (v) is sufficient such that there is unreacted hydroxyl functionality in the PVB resin composition, and wherein the PVB resin composition has a hydroxyl number of from about 15 to about 34 and further wherein the
35 meso to racemic ratio (M/R) of the PVB composition is in the range of from about 2.5 to about 5.0.

14. The composition of Claim 13 wherein sodium methyl cocoyl taurate is the surfactant.
15. The composition of Claim 13 wherein sodium laurel sulfate is the surfactant.
- 5 16. The composition of Claim 13 wherein sodium dioctylsulfosuccinate is the surfactant.
17. The composition of Claim 13 wherein the tensile creep is less than or equal to 2.5.
18. The composition of Claim 13 wherein the tensile creep is less than
10 or equal to 1.5.